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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/785,091	02/25/2004	Yosuke Oyabe	249245US2	8512
22850	7590	10/30/2006	EXAMINER	
C. IRVIN MCCLELLAND OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, P.C. 1940 DUKE STREET ALEXANDRIA, VA 22314			PARSONS, THOMAS H	
			ART UNIT	PAPER NUMBER
			1745	

DATE MAILED: 10/30/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No.	Applicant(s)
	10/785,091	OYABE ET AL.
	Examiner	Art Unit
	Thomas H. Parsons	1745

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on 21 August 2006.
- 2a) This action is **FINAL**.                                   2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 1,3,4,6,7,9 and 10 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) Claim(s) \_\_\_\_\_ is/are allowed.
- 6) Claim(s) 1, 3-4, 6-7, snf 9-10 is/are rejected.
- 7) Claim(s) \_\_\_\_\_ is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All    b) Some \* c) None of:
  1. Certified copies of the priority documents have been received.
  2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)	4) <input type="checkbox"/> Interview Summary (PTO-413)
2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)	Paper No(s)/Mail Date: _____
3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)	5) <input type="checkbox"/> Notice of Informal Patent Application
Paper No(s)/Mail Date: _____	6) <input type="checkbox"/> Other: _____

### **Response to Amendment**

This is in response to the Amendment filed 21 August 2006.

#### **(Previous) DETAILED ACTION**

##### ***Specification***

1. The objection to the abstract for not being limited to a single paragraph has been **withdrawn** in view of Applicants' Amendment.

##### ***Claim Rejections - 35 USC § 102***

2. The rejections of claims 1-6 under 35 U.S.C. 102(b) as being anticipated by JP58-176879 have been **withdrawn** in view of Applicants' Amendment.
3. The rejections of claims 1-6 under 35 U.S.C. 102(b) as being anticipated by Miller et al. (6,756,141) have been **withdrawn** in view of Applicants' Amendment.

##### ***Claim Rejections - 35 USC § 103***

4. The rejections of claims 7 and 8 under 35 U.S.C. 103(a) as being unpatentable over JP58-176879 have been **withdrawn** in view of Applicants' Amendment.
5. The rejections of claims 7 and 8 under 35 U.S.C. 103(a) as being unpatentable over Miller et al. have been **withdrawn** in view of Applicants' Amendment.

***Double Patenting***

6. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the “right to exclude” granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

7. Claims 1-7 **stand** provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1, 3-5 and 15 of copending Application No. 10/629,550.

Claim 1-6: Although the conflicting claims (claims 1, 3-5) are not identical, they are not patentably distinct from each other because while both claims are directed toward a voltage applications means, the means of instant application would encompass not only the means of the copending application but any other means known to one skill in the art for applying a voltage (i.e. the instant application is broader in scope than that of the copending application).

**Claim 7:** Although the conflicting claim (claim 18) is not identical, they are not patentably distinct from each other because while both claims are directed toward controlling the movement of the fuel or the oxidant, the claim of the instant application is broader in scope than

that of the copending application and would obviously encompass applying a voltage between the internal electrode and the fuel electrode or the oxidant electrode.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

### **Response to Arguments**

The Applicants' arguments filed 21 August 2006 have been considered but are moot in view of the new grounds of rejection.

### **(New) DETAILED ACTION**

#### ***Claim Rejections - 35 USC § 112***

8. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

9. Claims 1, 3-4, 6-7 and 9-10 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claims 1 and 7, the phrase "type" renders the claim indefinite because the addition of the word "type" to an otherwise definite expression extends the scope of the expression so as to render it indefinite. See MPEP § 2173.05(d). Claims 3-4, 6, 10, and 10 are rejected to as being dependent upon independent claims 1 and 7.

***Claim Rejections - 35 USC § 102***

10. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

11. Claims 1, 3, 4, 6, and 10 are rejected under 35 U.S.C. 102(b) as being anticipated by JP58-176879 as further evidenced by Takada et al. (5,460,896).

**Claim 1:** JP58-176879 in Figures 1 and 2 discloses a solid polymer fuel cell comprising; an ion exchange membrane (1) made of a proton conductor, a fuel electrode (6) provided on one side of the ion exchange membrane, an oxidizer electrode (7) provided on another side of the ion exchange membrane, at least one internal electrode (3) provided in the ion exchange membrane, and voltage application device for applying voltage to the at least internal electrode which is configured to control an electrode potential of the internal electrode by connecting a power source between the internal electrode and one of the fuel electrode and the oxidizer electrode (Because the fuel cell of JP '879 is structurally the same as that instantly disclosed, it anticipates claimed configuration and control). JP '879 discloses that according to the fuel cell, the voltage can be measured, which anticipates a voltage applications means for applying a voltage to the electrode to be measured. See also the abstract.

JP '879 discloses in the abstract a means for connecting a power source between the at least internal electrode and one of the fuel electrode and the oxidizer electrode.

JP '879 in the abstract discloses that the electrolyte is an ion exchange membrane.

Because JP '879 discloses the same type of fuel cell (i.e. a solid state electrolytic fuel cell) as that instantly disclosed, it anticipates an ion exchange membrane.

Takada et al. is cited to show that a polymer solid fuel cell would inherently provide the claimed ion exchange membrane (col.1: 7-15, col. 2: 35-45, col. 4: 14-15, and col. 5: 45-46).

**Claim 3:** JP '879 discloses in the abstract that the voltage application means is a means for connecting, by way of one of a conductive member and a load, between the at least internal electrode and one of the fuel electrode and the oxidizer electrode.

**Claim 4:** JP '879 in Figure 2 discloses that the internal electrode is a layered structure (i.e. the electrode is inserted into the electrolyte and thus would be a layered structure).

**Claim 6:** JP '879 in the abstract discloses that hydrogen is used as a fuel.

**Claim 10:** JP '879 discloses in Figure 2 both the fuel electrode and the oxidizer electrode in direct contact with different sides of the ion exchange membrane.

12. Claims 1, 3, 4, 6, and 10 are rejected 35 U.S.C. 102(b) as being anticipated by Miller et al. (6,756,141) as evidenced by Takada et al. (5,460,896).

**Claim 1:** Miller et al. in Figures 1 and 7 disclose polymer solid fuel cell (100) comprising; an ion exchange membrane made of a proton conductor (1046), a fuel electrode (101) provided on one side of the ion exchange membrane, an oxidizer electrode (106) provided on another side of the ion exchange membrane, at least one internal electrode (104) provided in the ion exchange, and voltage application device for applying voltage to the at least internal electrode which is configured to control an electrode potential of the internal electrode by

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connecting a power source between the internal electrode and one of the fuel electrode and the oxidizer electrode (Because the fuel cell of Miller et al. is structurally the same as that instantly disclosed, it anticipates claimed configuration and control). (col. 1: 8-46, col. 3: 1-5, col. 8: 39- col. 9: 39, col. 9: 61-col. 12: 14).

Miller et al. disclose a means for connecting a power source between the at least internal electrode and one of the fuel electrode and the oxidizer electrode (col. 8: 39-col. 9: 39 and col. 11: 7- col. 12: 14).

Miller et al. disclose that the electrolyte is an ion exchange membrane (i.e. an ionomer membrane) (col. 3: 1-5).

Takada et al. is cited to show that a polymeric would inherently provide the claimed ion exchange membrane (col.1: 7-15, col. 2: 35-45, col. 4: 14-15, and col. 5: 45-46).

**Claim 3:** Miller et al. disclose a means for connecting, by way of one of a conductive member and a load, between the at least internal electrode and one of the fuel electrode and the oxidizer electrode (col. 9: 12-25).

**Claim 4:** Miller et al. disclose that the internal electrode is layered structure (abstract and col. 8: 46-50).

**Claim 6:** Miller et al. disclose that hydrogen or methanol is used as a fuel (col. 4: 2-13 and claim 15).

**Claim 10:** Miller et al. in Figure 1 discloses that both the fuel electrode and the oxidizer electrode in direct contact with different sides of the ion exchange membrane.

***Claim Rejections - 35 USC § 103***

13. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

14. Claims 7 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP58-176879 as evidenced by Takada et al. (5,460,896).

**Claim 7:** The rejection of claim 7 is as set forth above in claim 1. Further, because JP '879 discloses providing at least one internal electrode in the on exchange membrane and applying voltage capable of oxidizing the fuel or reducing the oxidizer on the internal electrode, it obviously would control a movement of a fuel or oxidizer permeated in the ion exchange membrane by providing at least one internal electrode in the ion exchange membrane and applying voltage capable of oxidizing the fuel or reducing the oxidizer in the internal electrode.

Takada et al. is cited to show that a polymer solid fuel cell would inherently provide the claimed ion exchange membrane (col.1: 7-15, col. 2: 35-45, col. 4: 14-15, and col. 5: 45-46).

**Claim 9:** The rejection of claim 7 is as set forth above in claim 1. Further, because JP '879 discloses providing at least one internal electrode in the electrolyte and applying voltage on the internal electrode, it obviously would provide a step of suppressing a generation of radicals in the fuel cell by preventing the mixture and reaction of the excess permeated oxidizer to the fuel electrode and the fuel, or by preventing mixture and reaction of the excess permeated fuel to the oxidizer electrode and the oxidizer.

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15. Claims 7 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Miller et al.

**Claim 7:** The rejection of claim 7 is as set forth above in claim 1. Further, because Miller et al. disclose providing at least one internal electrode in the ion exchange membrane and applying voltage capable of oxidizing the fuel or reducing the oxidizer on the internal electrode, it obviously would control a movement of a fuel or oxidizer permeated in the ion exchange membrane by providing at least one internal electrode in the ion exchange membrane and applying voltage capable of oxidizing the fuel or reducing the oxidizer in the internal electrode.

Takada et al. is cited to show that a polymer solid fuel cell would inherently provide the claimed ion exchange membrane (col.1: 7-15, col. 2: 35-45, col. 4: 14-15, and col. 5: 45-46).

**Claim 9:** The rejection of claim 7 is as set forth above in claim 1. Further, because Miller et al. disclose providing at least one internal electrode in the ion exchange membrane and applying voltage on the internal electrode, it obviously would provide a step of suppressing a generation of radicals in the fuel cell by preventing the mixture and reaction of the excess permeated oxidizer to the fuel electrode and the fuel, or by preventing mixture and reaction of the excess permeated fuel to the oxidizer electrode and the oxidizer.

### **Conclusion**

16. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thomas H. Parsons whose telephone number is (571) 272-1290. The examiner can normally be reached on M-F (7:00-4:30) First Friday Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Pat Ryan can be reached on (571) 272-1292. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Thomas H Parsons  
Examiner  
Art Unit 1745

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PATRICK JOSEPH RYAN  
SUPERVISORY PATENT EXAMINER